



C20-AEI-405

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**BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023
DAEI – FOURTH SEMESTER EXAMINATION
INDUSTRIAL ELECTRONICS**

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Draw the V-I characteristics of UJT.
2. List the applications of TRIAC.
3. Draw the ISI circuit symbols of SCS, SUS and GTO SCR.
4. List the applications of photovoltaic cells.
5. Draw the circuit symbols of photo diode, photo transistor, LDR and LED.
6. List the properties of ultrasonics.
7. List the types of resistance welding.
8. Mention different industrial heating methods.
9. List the storage batteries used in UPS.
10. State the principle of inverter.

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Explain the two-transistor model of SCR and its V-I characteristics.

(OR)

(b) Explain SCR triggering using UJT.

12. (a) Explain the working of discrete display-bar graph.

(OR)

(b) Explain the working of discrete display-seven segment display.

13. (a) Explain the principle of induction heating and mention its merits.

(OR)

(b) Draw the circuit of H.F power source for induction heating and explain its working.

14. (a) Explain the working of voltage source inverter.

(OR)

(b) Explain the working of single-phase bridge inverter using MOSFET.

15. (a) Explain the working of SMPS with a block diagram.

(OR)

(b) Explain the working of PWM inverter.

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain the conduction and working of UJT with diagram.

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